



POLITECNICO
MILANO 1863

MSC IN COMPUTER SCIENCE AND ENGINEERING

SOFTWARE ENGINEERING 2 PROJECT

TrackMe Requirement Analysis and Specification Document

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1 Introduction

prima dei sottocapitoli

1.1 Purpose

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1.2 Scope

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1.3 Definitions, Acronyms, Abbreviations

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1.4 Revision history

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1.5 Reference Documents

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1.6 Document Structure

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2 Overall Description

Here you can see how to include an image in your document.

Here is the command to refer to another element (section, figure, table, ...) in the document: *As discussed in Section 1.6 and as shown in Figure 1,* Here is how to introduce a bibliographic citation [?]. Bibliographic references should be included in a .bib file.

Table generation is a bit complicated in Latex. You will soon become proficient, but to start you can rely on tools or external services. See for instance this <https://www.tablesgenerator.com>.

2.1 Product perspective

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2.2 Product functions

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2.3 User characteristics

tre

2.4 Assumptions, dependencies and constraints

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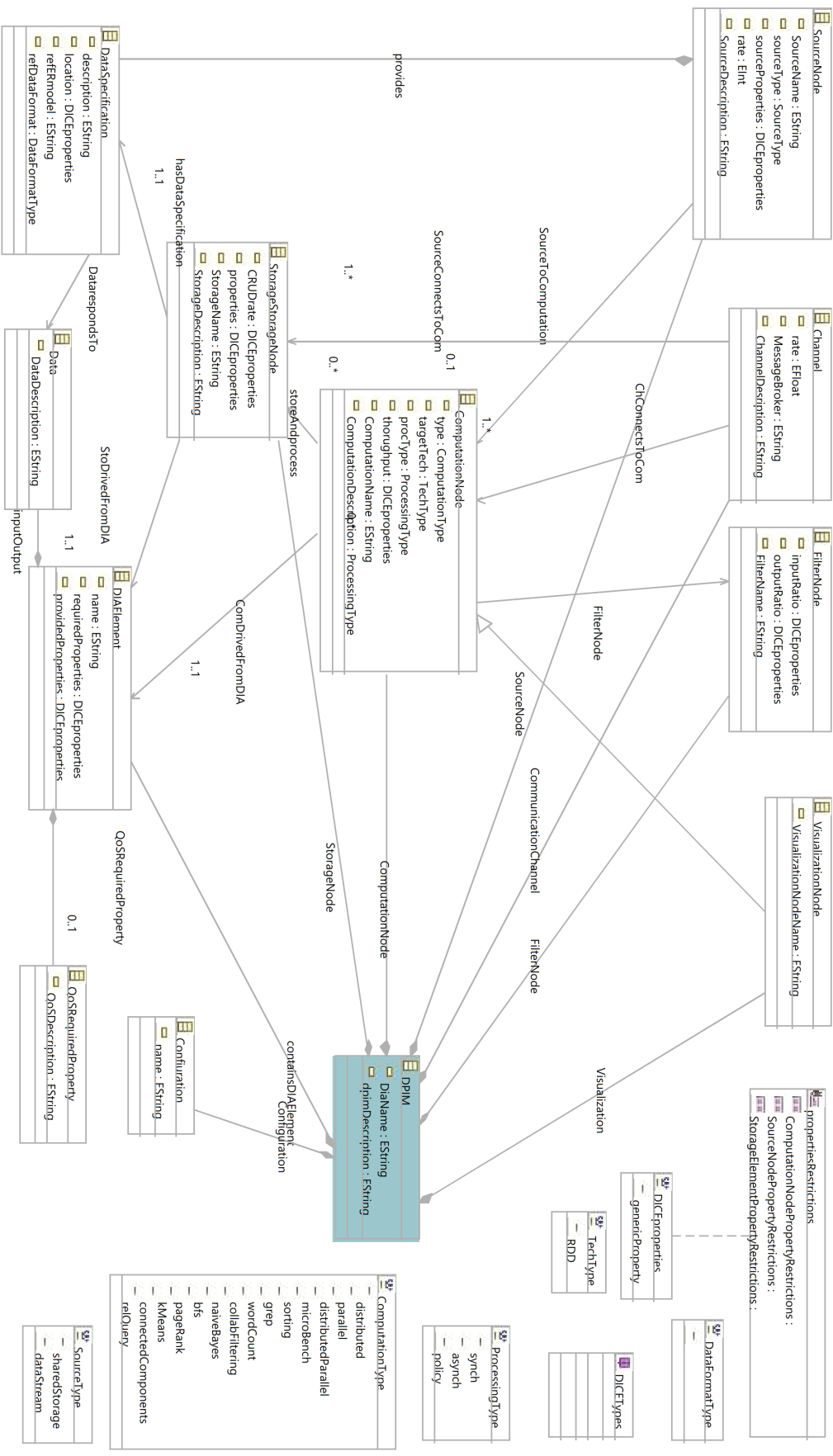


Figure 1: DICE DPIM metamodel.



3 Specific Requirements

Organize this section according to the rules defined in the project description.

3.1 External Interface Requirements

3.1.1 User Interface

3.1.2 Hardware Interfaces

3.1.3 Software Interfaces

3.1.4 Communication Interfaces

3.2 Functional Requirements

3.3 Scenarios

3.3.1 Scenario 1

While talking, John tells his friend Matt about a new service called Data4Help that helps you keeping track of your health status. Frank, interested in checking his heart rate, downloads the app on his smartphone and fires it up. The app asks him to register to the service by filling a form with his personal information, including his fiscal code and a password of his choice that will be used as credentials for the login. After filling the form he clicks on the final checkbox to accept the personal data treatment policy. Right after clicking on the "Submit" button, Frank receives a notification saying he successfully registered to Data4Help.

3.3.2 Scenario 2

Mary, a Data4Help customer, received for her birthday the new Eppol iClock. After the initial setting of the device, she decides to download the Data4Help application for her smartwatch. Once installed, she logs in with her account and right after that, the "Device Management" view of the application appears. Mary taps on the iClock icon and by selecting "Heart Rate" from a dropdown she assigns the tracking of that parameter to her smartwatch. With the same procedure, she assigns to her smartphone the tracking of the "Position" parameter. Finally, she clicks on the "Confirm" button and the app saves the settings and returns back to the home page.

3.3.3 Scenario 3

Steve, a Data4Help customer with diabetes, needs to periodically check the glucose levels observed by his medical device connected with the Data4Help application on his smartphone. For doing this, he starts the Data4Help application and when the homepage shows up he clicks on the "myData" tab. A nice view appears, containing all the information about his monitored health parameters with a lot of colorful diagrams. Steve filters out the displayed content by selecting the "Glucose Level" radio button on the top of the page and he changes the information granularity from "Week" to "Day" using a dropdown.

3.3.4 Scenario 4

Michael Garcia, Boyer Pharmaceutical CEO, heard about the Data4Help service and in agreement with the Administrative Board, he decided to introduce it in the company. He visits www.trackme.com/data4help and clicks on the "Business Solutions" section in order to register his company as a registered third party of the service. To do this, Michael fills in the registration form with all the requested information about the company, including the VAT-number, an e-mail and a password. After that he clicks on the "Submit" button and he immediately receives an e-mail with a link to complete the registration procedure.

Name	User registration
Actor	User
Entry conditions	App installed on user's device (and run while not locked)
Events flow	Click on the "Subscribe" button Fill the registration form
Exit conditions	Registration is successful and the user is informed
Exceptions all the exceptions take the user back to the registration procedure	The user is already registered There is some invalid data

3.3.5 Scenario 5

Brian, patient of the Lenox Private Medical Center, was released yesterday. The clinic, registered to the Data4Help service, decides to monitor his health status to see if the treatment he was under reached the desired results. The doctor that was in charge of Brian logs in to the Data4Help reserved page of the clinic. Once logged in, he inserts Brian's fiscal code and selects from a checkbox "Heart Beat" and "Temperature" as the data to monitor. Finally he chooses from a dropdown "3 months" as the observation period. As soon as the doctor clicks on the "Send Request" button on the bottom of the page, Brian receives a notification on his smartphone. He launches the application and when the home page shows up he taps on the "Incoming Requests" tab. Here he sees the request coming from Lenox Private Medical Center. He briefly reads the description and he clicks on the "Accept" button. A confirmation e-mail, saying the patient accepted the treatment of his personal data, is immediately sent to Lenox Private Medical Center. The doctor sees the e-mail and goes in the "Sent Requests" section of the Data4Help personal page of the company. After clicking on Brian's answer, all the requested data are displayed on screen.

3.3.6 Scenario 6

Pfuzer, a big pharmaceutical company registered to Data4Help service, needs to gather the heart rate data of all the Italian young people under 30 years old for a market analysis aimed at evaluating the production of a new drug against heart disease. For this reason Todd Chavez, the marketing manager of the company, goes to the Pfuzer personal Data4Help page and once logged in he clicks on the "Aggregated requests" tab in the home page. Once in the page he types in the textbox "Italy" as location, and selects the age range " ≤ 30 " using a slider. Then he clicks on "Send request" on the bottom of the page and a warning message is immediately displayed on screen saying that the request cannot be satisfied. For this reason, Todd decides to untighten the search parameters. After changing them the constraints are satisfied and the requested data is immediately displayed on screen.

Name	User log in
Actor	User
Entry conditions	App installed on user's device and user e
Events flow	Click on the "Log in" button The user e
Exit conditions	The log in is successful and the user is
Exceptions	Credentials aren't valid
the exceptions are notified to the user and the Log in procedure restart height	

Name	Device Management
Actor	User
Entry conditions	User enter in the "Device Management" pannel of the App
Events flow	The list of devices connected to the account is shown The user select which device to configure For
Exit conditions	The user have set his/her preference and saves them
Exceptions	the parameter is already tracked from a more reliable source (maybe??)

Name	MyData
Actor	User
Entry conditions	User enter in the
Events flow	The system show
Exit conditions	The user exit the
Exceptions	the system haven
the exceptions are notified to the user and the MyData page is shown with the available data height	

Name	Third Party Registration
Actor	Third Party
Entry conditions	The third party clicks on "Business s
Events flow	Click on the "Register" button Fill th
Exit conditions	Registration is completed and a noti
Exceptions	Company already registered email a
all the exceptions are notified and the procedure goes back to registration height	

Name	Third Party Log in
Actor	Third Party
Entry conditions	The third party goes on www.trackme
Events flow	Click on the "Log in" button Enter the
Exit conditions	Log in is successful and the client is r
Exceptions	Credentials aren't valid
the exceptions are notified to the client and the Log in procedure restart height	

Name	Single Data Request
Actor	Third Party, User
Entry conditions	A third party client is logged in and goes under "Single Data Request"
Events flow	Click on "Single Data Request" Insert the fiscal code of the person whose data are requested Check
Exit conditions	The user has responded to the request and, if successful, the data are made available to the third cor
Exceptions	The observation period covers a time period in the future This exception launches the subscription p

Name	Aggregate Data Request
Actor	Third Party, Data4Help (maybe?)
Entry conditions	A third party client is logged in and goes under "Aggregate Data Request"
Events flow	Click on "Aggregate Data Request" Insert the location of the data Select the age range Customize a
Exit conditions	The request was successful and the data are made available to the third company
Exceptions	An observation period is selected and it covers a time period in the future This exception launches t

Name	Data Subscription
Actor	Third party
Entry conditions	A request, for single or aggregate data, has been made with an observation period that extend in the
Events flow	If the request is successful, the third company is updated about the changes in the data that it reques
Exit conditions	The observation period elapses and the subscription end
Exceptions	Data aren't available anymore The exception are notified to the client via e-mail

Name	Anonym?
Actor	Data4Help
Entry conditions	Data4Help recives a request for aggregate data and the system algorithm anonymize the data
Events flow	An aggregate request arrives at Data4Help The anonymization algorithm launches on the available c
Exit conditions	The data were successfully anonymized by the algorithm
Exceptions	The available data are scarce (≤ 1000) hence the anonymization is impossible This exception noti

Name	test
Actor	test
Entry conditions	test
Events flow	test
Exit conditions	test
Exceptions	test

3.3.7 Scenario 7

3.3.8 Scenario 8

3.3.9 Scenario 9

3.3.10 Scenario 10

3.4 Use Case

3.5 Performance Requirements

3.6 Design Constraints

3.6.1 Standard compliance

3.6.2 Hardware limitations

3.6.3 Any other constraint

3.7 Software System Attributes

3.7.1 Reliability

3.7.2 Availability

3.7.3 Security

3.7.4 Maintainability

3.7.5 Portability

4 Formal Analysis Using Alloy

Organize this section according to the rules defined in the project description.

5 Effort Spent

Provide here information about how much effort each group member spent in working at this document. We would appreciate details here.

6 References